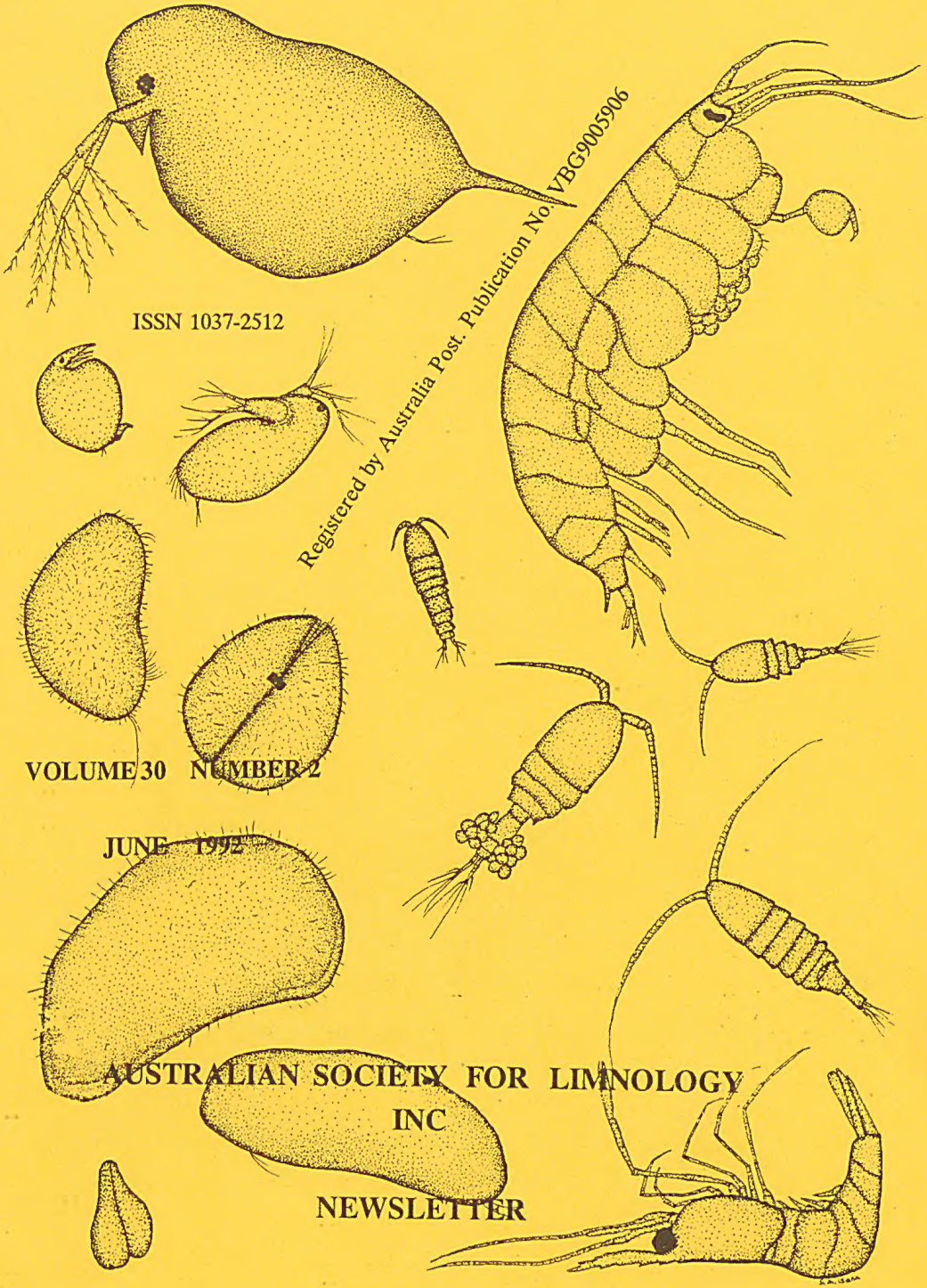

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC

NEWSLETTER

MEMBERSHIP DETAILS

The Australian Society for Limnology Inc. (ASL) is an association of over 400 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of general interest, book reviews and announcements of upcoming events likely to be of interest to members. Occasionally, it produces a Special Publication series and a Directory of Members.

Membership applications are welcome from any person with an interest in limnology. Five classes of subscribing membership are available:

Ordinary members	$ 25.00
Student members	$ 12.50
Life members	$200.00
Institutional members	$ 30.00
Sustaining members	Fees on application

Membership covers the period from 1 July to 30 June and all members receive the regular and occasional publications produced by the society. Members may also choose to receive the Australian Journal of Marine and Freshwater Science, the Australian Journal of Zoology and/or the Australian Journal of Botany at special reduced rates. The subscription for each journal is based on the calendar year in which the subscription is paid.

Enquiries relating to membership should be directed to the Membership Officer:

Mrs Margaret Hart
22 Netherby Avenue
MULGRAVE VIC 3170 Ph. (03) 5604406 [Fax (03) 5604406]

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Material for publication in the September issue of the newsletter should be sent to the editors before the 21st of August.

Contributions are welcome on any topic concerned with limnology (or anything else that may be of interest to the readers). Long articles should be forwarded as unformatted text on IBM-compatible discs, or as formatted text in any commonly used word processing package (e.g. WordPerfect, Microsoft Word, Wordstar). Camera ready copy can also be sent.

Cover: The cover shows a nice piece of artwork on a theme supplied by Shirley Balla (good to see you are still out there and drawing - judging by the entries in the Great Logo Search, we need you!).

Editorial

THE NEW AGE - TOWARDS A NEW ASL MARKETING POLICY

Om ... Om ... Om mani padme hum ... Oh, hello ... Greetings in the name of the all-seeing Gaia-water-mother/father substitute. We, in our humble present existence, are your special guest editors for this edition. My name is Moon-flower and my caftan-and-sandalled-friend is known as Earth-summit. We represent the new marketing arm of the Australian Society for Limnology - The Peace and Harmony ASL New Age Supplies and Limnological Equipment Pty Ltd (a wholly-owned subsidiary of Bagwan Enterprises) - and it is our deep pleasure to present you today with an overview of the spiritual products we have available, all specially tailored to the peace of mind of the new limnologically aware.

Firstly, we have the largest supply of crystals in the Southern Hemisphere. Crystals work by tapping into the unseen, undetectable energy forces that flow in unseen, totally undetectable grids over the surface of the globe, bursting forth out of the ground at selected holy places, like Byron Bay, the Acheron River and the Melbourne Cricket Ground. Small pieces of crystalised substances, collected from these holy places harness the energy of the grid and focus the power into the mind and vicinity of the wearer (also focussing the money of the wearer into a PHASLNASLE bank account in tax-free Norfolk Island - another of those holy places). Only a select few can analyse the crystal structure to decipher the hidden code, establishing the best use for each crystal.

For the statistically minded, we have crystals of Anovarium (with a choice of one-way or two-way lattice structures) to assist with that tough decision of the appropriate data analysis. We can also offer you Decoranium and Twinspanium - place one of these near the computer screen and all your multi-variate analyses will come out just the way you want them to. For the high-powered few, we can supply the rare and expensive crystal, Scalium - most popular in the hybrid non-metric multi-dimensional form.

While sampling, why not wear a piece of Surberium or Hessium, or Grabium. The energy grid around these crystals passes down the inside leg of the waders and flows out over the substrate, drawing any nearby invertebrates into the collecting net. We can also supply Boultonsuckium, but that doesn't really work. And while picking those bugs, sprinkle a small amount of ground Sortium into the sample and watch those little buggers just sort themselves (this is one of our more popular lines).

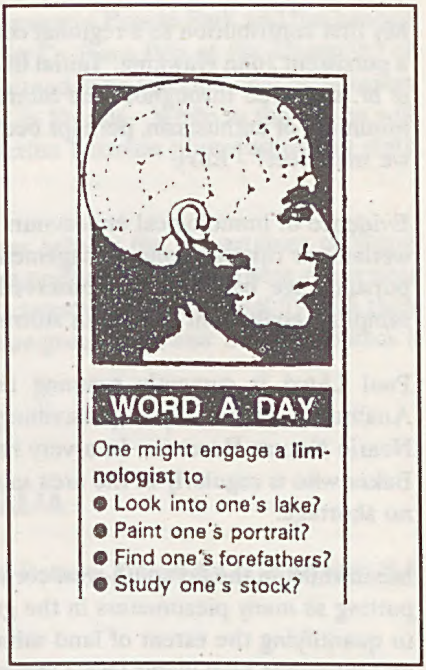
For the annual conferences, try wearing a small piece of Doorprizium around your neck when giving your talk. The energy field around this crystal will ensure that you come to the attention of the members of the prize collective, giving you an advantage over other ASL members.

We also have relaxation tapes. Most popular is a series of babbling brook sounds. Place these on the stereo when feeling depressed or sorting invertebrates [aren't they the same thing - *regular Eds.*]. Tapes are available in a variety of Reynold's numbers, Froude numbers and Boundary-layer thicknesses. Other tapes in the catalogue include the sound of a lake on a very still day, the mating calls of the Otway stonefly (popular among romantics) and Lawrence Olivier reading selections from *Australian Freshwater Life*.

And then there's our essential oils. Just a dab of these behind your ear, and we guarantee to solve any of your problems. Take Essence of Chironomid or Oil d'Oligochaete for examples. Just one drop of either will repel any unwanted amorous advances. In fact, they will repel any advances at all, so use care and don't wear them when at an interview for a job.

Our selection of books and pamphlets also contain keys to the truths of the limnological universe. The recent publication "Crop Circles - Are They An Intergalactic Dichotomous Key" by Barmuta and Doeg ($15.95 +pah) proves that crop circles were made by alien limnologists and actually represent stylised pictures of chironomid mouthparts that form part of a giant "Key to the Chironomids of the Universe" (the basis of the ancient Inca tradition of invertebrate worship). Other books cover UFO's, CIA mind control, fluoridation, subliminal messages, the Radiance Technique, synchronicity, oxygen therapy and channelling; and how they relate to the limnological world. Write now, care of the usual editors of this newsletter for more details.

Farewell from the Mother/father-water-god-surrogate and may your mesh nets never rip.



Answer later on.

SCUTTLEBUTT, RUMOUR AND PRATTLE

NEW SOUTH WALES

Correspondent: John Hawking, MDFRC, P.O. Box 921, Albury NSW 2640

The editors have tried to dampen the enthusiasm of the New South Wales limnos by notifying the correspondent at the eleventh hour. But even this could not deter our outback correspondent from the lower Darling (an ancestral tributary of the Acheron), David Harriss.

NSW, Water Resources, Dareton

My first contribution as a regional correspondent comes after 15 months of requests from a persistent John Hawking. Initial thoughts were to organise a joint report by limnologists *et al.* scattered throughout the Sunraysia. However, all requests have been met with a minimum of enthusiasm, perhaps better described as vacant expressions [see, imagine how we must feel? - *Eds*].

Evidence of limnological endeavours in this part of the world is as sparse as any form of wetland or riparian zone management. Nonetheless, a number of devotees of the gentle pursuit have been casually observed wandering through ephemeral lakes or standing, sampling equipment in tow, in stormwater drains waiting for an elusive rain event.

Paul Lloyd is currently roaming the banks of Lake Nearie on the Great Darling Anabranch on his way to prescribing appropriate hydrologic management for the Lake Nearie Nature Reserve. In a very remote area he is more than likely to run into Peter Baker who is regularly in the area sampling toxic cyanobacteria blooms, of which there is no shortage.

Meanwhile, in the far south-west corner of the State, Mike Erny and a team of drillers are putting as many piezometers in the ground as possible east of Lake Victoria with a view to quantifying the extent of land salinisation and wetland degradation occurring because of continuous high water levels and groundwater displacement.

Flow regimes to the Lower Darling river from the Menindee Lakes are soon to be reviewed, considering water quality and in-stream requirements in addition to the traditional irrigation supply and water supply to South Australia.

Finally, an invitation to any interested readers to call in whenever in the Region. No problem organising a quick tour with a limnological bias.

Murray-Darling Freshwater Research Centre

The MudFrecks team of Boon, Green, Hawking, Shiel and Sorrell finally arrived back from ASL, after braving the wilds of Tasmania (excellent conference, well done Tassie). With the conference out of the way, its time for another attempt to obtain funds in the next round of "CRC" applications.

The Australian Newsprint Mills have established a bio-assay laboratory, at Albury, to monitor discharges from the mill. Biological monitoring of macroinvertebrates and bio-assays of invertebrates and vertebrates will be undertaken by Helen King, Daryl Nielsen and other Centre staff.

Brian Sorrell picked up the travel bug after the conference at Bronte Park and has headed off overseas. Brian will spend six weeks working with Dr Hans Brix at the University of Aarhus, in Denmark and then travel to the USA to attend "The International Symposium on the Biology and Management of Aquatic Plants" in Florida. While in the US he will attend a 10 day workshop, to investigate the interaction between photorespiratory state and carbon availability.

Terry Hillman, Steve Wilson and John Hawking ares helping the Department of Water Resources (Sydney) establish a biological monitoring program of the northern rivers near Moree. Rod Oliver and Russ Shiel are now media personalities (Channel 7) with their performances in the TV Special "The life of a blue-green alga and how to control it spreading".

SOUTH AUSTRALIA

Correspondent: Marcus Brownlow, Department of Botany, University of Adelaide, S.A. 5000.

Botany Department

MDFRC and Paul Boon heaved a hearty sigh of relaxed relief when Kerri Muller finished her successful and rewarding summer scholarship looking at cellulose breakdown, and took her hectic full-on lifestyle back to Adelaide, and under the wing of George Ganf's wetland group. Kerri joined Alison Hay and Ben Taylor in a more extensive vegetation survey of south eastern wetlands, and examined floristic diversity in Topperweins, Mullins and Bloomfield Swamps. This will add to the extensive data collected for Bool Lagoon and

Deadman's Swamp to aid the Australian National Parks and Wildlife Service to 'Save The Bush'. Alison and Giles Flower completed and submitted their botanical contribution to the River Torrens Linear Park survey, in conjunction with Keith Walker's zoological contribution.

George Ganf, in addition to expounding on radio about blue-green algae, has contributed to a paper on geosmin production by *Anabaena*, with Kath Bowmer and other authors, recently published in Wat. Sci. Tech. George's other triumph is the near completion of arrangements for a Graduate Certificate in Marine and Freshwater Ecology and Management, to be offered by The University of Adelaide (hopefully) in 1993. The course, taught by a range of people and overseen by George, will consist of three units: 1) Ecological Data Collection, Analysis and Modelling; 2) Ecology and Management of Marine Environments; 3) Ecology and Management of Inland Waters. Further information on this exciting new graduate course can be obtained by contacting George Ganf [Hey, don't we charge for ads in the Newsletter these days? - *Eds*].

And on to greater glory, George has also been successful with Keith Walker and others in securing LWRRDC funding for 3 years for an extensive water regime and wetlands study. The grant also includes two (hefty) postgraduate scholarships, and is set to make a major contribution to our knowledge of the functioning of wetland systems in semi-arid climates.

On a less lofty plane, our third year students successfully mapped and classified an ancient stand of Tea Tree (*Melaleuca halmaturorum*) in the centre of Bool Lagoon. Classification was on the basis of tree vigour, and was encouraged by NPWS who fear that the stand's days are numbered because of the lack of adequate regeneration. This theme will be continued by Matthew Denton [Live & Sweaty? - *Eds*], an intending Honours student with George.

Zoology Department, The University of Adelaide

Keith Walker has just returned from six weeks in Qinghai Province in northwestern China. He is one of a UN/FAO team developing a fishery management plan for Quinghai Hu, a lake so big that you can spot it on virtually any map of China. The lake is on a high plateau (3200 m) flanked by the Himalayas and the Kalakorum Mountains; it is saline (about 12.5 g/L), ultra-oligotrophic, and home to an endemic species of cyprinid, the naked carp *Gymnocypris przewalskii*. The plan is to provide a technical basis for management of the fishery and the lake environment. Keith will do some more work in Quinghai later this year, and the final management plan should be completed early next year.

For the rest of us, we spent the last six weeks in Adelaide, a small provincial city in southern Australia where the water can also be a bit salty. One of us, Andrew Boulton has just left for Arizona and Kentucky USA and the 1992 NABS conference - I am sure he will report on this highlight in the next ASL news. Christine Campbell recently realised the importance of oxygen as a life sustaining force for salt lake fauna, her experimental mini salt lakes became anoxic and in cleaning them she wore a most attractive(?) odour for many days. John Bradbury, also of the Salt Lakes Lab, has been spreading his amphipod interests around on a global scale, he is concurrently examining small things in mounting media on microscope slides from Tasmania and Quinghai Hu lake in China (re KFW).

Honours students are field-working and bug counting like crazy. Sam Wade is investigating the downstream impacts of road crossings on the invertebrate assemblages of streams in the Flinders Ranges. Shaun Meredith is examining the fauna of salt processing pans at Dry Creek, north of Adelaide. And last, but we may never forgive him for it, John Dalton-Morgan is calculating species diversity indices for the Coorong salt lake fauna to determine the number of samples required for a realistic description of their fauna.

Fran and Jim, in studying those amazing wonders of limnology, large rivers, have been locked in the lab far from these glories picking bugs from sediment or counting plankton blooms from the Coongie Lakes system (500,000 copepods in a 500ml jar!!!). Jim has just completed his last (that is what he always says) field trip to the Lake Eyre Basin and now plans to spend the next 50 years processing his many containers full of unreal data.

State Water Laboratory

Cyanobacteria has continued to dominate the activities of Dennis Steffensen, Mike Burch and Peter Baker, but a new process called downsizing has had some consideration recently. Mike gave a seminar at the S.A. branch of the AWWA recently and discussed the impact of the Darling River bloom on cyanobacterial research. Peter gave a poster presentation on toxic cyanobacterial taxonomy at ASL and he is still recovering from the nightlife at Bronte Park.

Jenny Beer and Peter Goonan continue to sort and identify macroinvertebrates and zooplankton from River Murray wetlands and Phil Suter has been analysing the data and assessing the macroinvertebrate community responses to a 110,000 ML/day flood which occurred in 1990. Phil has also prepared a paper on a new genus of Caenid mayflies.

NORTH QUEENSLAND

Correspondent: Paul Clayton, Department of Zoology, James Cook University, Townsville, Qld 4811. Ph: (077) 81 4520; E-mail: zlpdc@marlin.jcu.edu.au

Those of us who ventured south for the ASL conference have returned to defrost and relate stories of open fires, woollen pullovers, and the quantities of alcohol necessary to stay warm (and to keep up with Paul Bailey). Lately, the nightly temperatures in Townsville have been plummeting to around 18°C.

Richard Pearson regrets that he forgot to nominate Ian Campbell for the 1992 ASL Door Prize for the best non-verbal five minute warning hooter during a talk (Damn, there goes the ozone layer!). Maybe it was just something to do with thermo- regulation ?

Bronwen Scott has been frantically dissecting freshwater mussels (we're not really sure why and neither is she!) and George Lukacs and Richard Pearson have begun work on ponded pastures in conjunction with Queensland Department of Primary Industries and Queensland National Parks and Wildlife Service. George Lukacs is also continuing his work on phosphorous from canefields and the potential use of wetlands as biological filters. Richard Rowe has left us for the NABS conference in the U.S.A. to speak about Odonate behaviour.

The "seasons" have been difficult to come to terms with recently. We've had the wettest wet, the driest dry and the driest wet. If the unsettled weather continues we'll also have the wettest dry. These conditions have caused a few research headaches.

Research in the Burdekin River region is continuing; John Faithful on limnology in Lake Dalrymple, Morgan Thomas and Richard Pearson on flora and fauna of the Burdekin irrigation area and Bob Congdon and Richard Pearson on limnology and classification of wetlands with particular reference to the effects of irrigation drainage. "Post-wet" sampling is underway for these projects (identifying post-wet was the challenge).

Ray Volker and Dilwyn Griffiths are continuing their involvement as appointees to the Burdekin River Irrigation Area, Technical Advisory Committee.

Mr P.C. Murali Krishnan has completed his work for his Masters degree with a thesis entitled "Growth and mucilage production by laboratory cultures of *Aphanothece halophytica* Fremy". The organism for this work was isolated from high salinity ponds in the solar salt field at Bajool, Central Queensland, where it occurs as the major component of an extensive benthic mat. Mucilage released from the mat affects the viscosity of the overlying brine and, in turn, affects the quality of salt produced.

Cathy Yule has returned to Borneo after visiting us for three weeks. She spent the time writing her PhD thesis on stream fauna on Bouganville Island and wondering at the latest software advances.

I'm still waterfalling, with emphasis on falling, and about to try and rear some Blephariceridis. Oh, the dunder project is coming to an end. [We're very sorry to hear that - *Eds*]

Stay tuned for more next time.

TASMANIA

Correspondent: Leon Barmuta, Department of Zoology, University of Tasmania, G.P.O. Box 252C, Hobart, 7001; e-mail: Leon.Barmuta@zoo.utas.edu.au.

Dunno about you lot, but we're still recovering from the Congress.

However, life goes on AT (After Tyler). Welcome to Dr Gustav Hallegraeff who replaces Dr Tyler in the Department of Plant Science at the Hobart Campus of the University of Tasmania. Gustav comes to us from C.S.I.R.O. Fisheries and is well-known for his work on LRGTs that have found their way to Australia in bilge water of ships. He's also famous for other things too, but we'll let him settle in before pestering him for gossip.

Inland Fisheries is where it all happens, of course. The bulk of the Team who organised our Congress got to do another highly successful Open Day of their own on the weekend after. Yea team, and well done on the organisation of the ASL Congress.

Jan Barton has run away to PNG to recuperate after finishing up projects on the effects of herbicides. She will return for a short stint using artificial streams to examine the effects of Atrizine for a TFRC-funded project. Laurie Cook, the partner-in-pesticides, is presently fiddling around with heavy metals and baby fish on a short contract that is somehow connected with the HEC. Mark Nelson is trapping sediments from cable-logging areas, while Henry Maxwell is finishing up a biomonitoring project in the World Heritage Area whilst applying to get into the British Army. Sounds like a safe haven to us: nobody wants to invade Britain after Thatcher & Major anyway. [Just don't learn Bosnian, Henry - *Eds*].

Andrew "Gas bubble disease" Sanger is negotiating on lake levels with the HEC; reportedly "much lake modelling and flesh-pressing" involved. He is also monitoring the emission of smelly water from the lovely new Lake Burberry.

Peter, Paul and Mary continue to make strides in minimum flow things. Paul Humphries and Peter Davies have just contributed to the first workshop on reviewing water use in the South Esk, and Mary Mulcahy tries to keep the lads under control... but really she and Paul are ruminating over the first year's worth of data.

Finally, there seems to be a new State Water Policy to which IFC has "provided input". Sounds like something I should find out about, so I'll run away now and find out.

PAPUA NEW GUINEA

Correspondent: Ross Smith, Environment Department, Ok Tedi Mining Limited, P.O. Box 1, Tabubil, W.P., P.N.G.

Editorial Note: Well, no. He's not there any more. A fax was returned to us saying he's at BHP Engineering, P.O. Box 1237, North Sydney, 2059. Bet he hasn't told Margaret Hart that he's moved yet. We are investigating.

Meantime, any volunteers for the PNG gossip position?

WETLAND INVENTORY - TOWARDS A UNIFIED APPROACH

WORKSHOP SUMMARY STATEMENT

Introduction

The Australian National Parks and Wildlife Service (ANPWS) and the Bureau of Rural Resources (BRR) jointly convened a technical workshop in August 1991 to discuss the development of standardised definitions, classification methods and data collection protocols for use in wetland inventories Australia-wide.

The principal goals of the workshop were to

- establish a broad definition of the term "wetland" for use by land management and conservation agencies
- derive a useful wetland classification system to be used on a national basis and
- agree on a minimum or core data set for wetland inventory.

The workshop was attended by thirty representatives from State and Commonwealth agencies and tertiary institutions. Much of the discussion centred around a draft discussion paper prepared by Barson and Williams (1991).

A Wetland Definition

Following a wide ranging discussion, most participants agreed that the RAMSAR definition of wetlands as

> "areas of marsh, fen, peatland or water, either natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which as low tide does not exceed six metres"

should be adopted for use in wetland inventory in Australia. It was agreed that there were difficulties in applying this definition. It could be interpreted as including almost any area with surface water and the use of terms such as "fen", "marsh" and "peatland" in the Australian context is likely to cause confusion. However, the RAMSAR definition does

encompass the range of wetland types found in Australia, and as it is widely used and accepted internationally, it should be adopted.

It was decided that it would be useful to provide a supporting paragraph to explain in simple terms what kinds of wetlands would be included in the definition for use in the Australian context. Michele Barson, Lance Lloyd, Bill Phillips and Bob Pressey were nominated to draft this supporting statement and circulate it to the workshop participants for comment.

Wetland Classification

Participants agreed that a wetland classification for Australia would provide the basis for development of a comprehensive overview of wetland resources. Such a nationally applicable classification should aim to provide an initial basis for biological conservation and management and enable broad comparisons between wetlands to be made. It should be sufficiently robust to cope with all wetland types likely to be encountered, and easy to apply. The interaction between the classification and core data set was recognised, and it was agreed that it would be highly desirable for the attributes to be used in the classification to form part of the core data set. Participants also agreed that it would be useful to develop the criteria suggested in the discussion paper for selection of the classification. Bob Pressey, Mike Fleming, Paul Wettin and Bill Phillips agreed to undertake this task.

Workshop participants agreed that development of an appropriate classification will necessarily be an iterative procedure. Given the present lack of data for wetlands, an a priori classification which enable wetlands to be 'categorised' on the basis of indicator attributes will be useful for inventory purposes.

Wetland classifications developed by Cowardin (1979) Paijmans and others (1985) and Semeniuk (1987) were reviewed and their applicability in the Australian context discussed. It was generally agreed that while none of these classifications provided precisely what was needed, they had some attributes in common which could provide the basis for a nationally applicable classification. These attributes included wetland geomorphology and hydrology or water regime, salinity and vegetation. Geomorphology and hydrology were seen to be the primary criteria, with salinity and vegetation characteristics useful as modifiers. Paul Wettin, Phil Suter, Mike Fleming, Bob Pressey, Lance Lloyd, Alan Hill, Jay Stricker and Geoff Winning volunteered to classify some of their site data using the classifications developed by Paijmans, Cowardin and Semeniuk in order to identify the optimal descriptors for wetlands geomorphology, hydrology, salinity and vegetation.

There was some discussion of the usefulness of biophysical or biogeographic regions in providing a framework for a wetlands classification scheme. The regions proposed for use by Stanton and Morgan (1977), the Bureau of Flora and Fauna (Barlow 1984, 1985), and ACIUCN (1986) were briefly reviewed. Drainage basins were not seen to provide appropriate regional subdivisions as the only characteristic they successfully delineate is surface water. It was agreed that if a regional framework was to be developed, the wetland classification scheme should not be dependent on it. This would enable the wetlands classification to be used in conjunction with any regional frameworks already in use.

Minimum Data Set

Workshop participants agreed on the need to establish a core or minimum data set for wetlands inventory. It was also agreed that this data set should be comprised of primary attributes, that is, be based on direct measurements or observations rather than derived data such as frequency classes or indices. Primary data are likely to remain useful even if the framework for inventory or evaluation changes, and are much easier to use for comparative purposes. Exceptions may need to be considered where direct measurements of primary attributes would be unreasonably time consuming and where categories are obvious, widely accepted and unambiguous. It was also recognised that in developing a field data collection sheet, it would be highly desirable if the core attributes could be measured on a single visit by a non-specialist. Attributes which could readily be obtained from other sources, such as aerial photography, should be excluded from the field collection sheet.

Existing core data sets proposed for wetlands inventory purposes by Beilharz (in preparation) McComb and Lake (1988) and Barson and Williams (1991) were briefly examined. Other attributes could be separated into essential and desirable information, with a further category for information which could most efficiently be derived from sources other than field collection. The minimum or core data set will comprise the mandatory record identifier plus the essential information. Following substantial discussion, the following set of attributes was agreed.

Record Identifier

- Accurate location
- Name of wetland - if known
- Compiler's name and contact details
- Date and time

Essential Information

- Landform
- Water regime - supply, frequency of inundation
- Water chemistry (pH, salinity, conductivity, colour, turbidity)
- Dominant plant growth form
- Area

Desirable Information

- Landuse - local and in the catchment
- Impacts/threatening processes
- Species (presence/absence)
- Ground water (depth, salinity)

Derived from other sources

- Wetland type
- Land tenure
- Conservation/management status
- Climatic regime
- Elevation
- Rare/threatened/endangered species present
- Biophysical/biogeographic region

It was agreed that accurate location, name of wetland (if available) date and time of visit and name of reporter should be mandatory items.

Three groups were established to discuss how the water chemistry, water regime and plant growth form attributes should be described. The water chemistry group concluded that the most important attributes for measurement were conductivity, pH, colour and turbidity (secchi depth). It was recommended that for each reading, time of day, weather, depth and location be noted. There was some suggestion that nitrogen, phosphorus and chlorophyll data should also be collected. However, this information is unlikely to be very useful in the context of a single visit.

The life forms of the dominant and other vegetation species present were considered to be the most useful vegetation characteristics for inclusion in the core data set. It was recommended that diagrams be provided to ensure that the life form categories present could be easily identified. Floristic data, including wetland species presence abundance,

and the nature of fringing and surrounding non-wetland vegetation were regarded as desirable additional information.

Hydrological attributes considered essential for recording or estimating on a single visit included maximum depth (when full), water regime category and water level (maximum depth at time of visit). Information which would be desirable to collect included previous flood height, slope of bed, percentage of bed covered by water, presence of water control structures (e.g. artificial banks), and depth to groundwater. Additionally, some attributes such as water source, catchment size, frequency, duration and timing of filling could also be recorded from other data sources such as aerial photography.

Participants agreed that some additional work would be required to develop detailed descriptions for the attributes.

On the day following the workshop the State/Territory co-ordinators for the *Directory of Important Wetlands in Australia* project met as part of the then CONCOM Working Group on International Agreements Relating to Migratory Birds and Wetlands. CONCOM has since become the Australian and New Zealand Environment and Conservation Council (ANZECC) and this Working Group has been disbanded in favour of two networks which will address wetlands and migratory species issues respectively. The Wetlands *Directory* project is continuing under the auspices of the ANZECC Wetlands Network coordinated by Bill Phillips of the Australian National Parks and Wildlife Service. At this meeting a standard format for data presentation in the *Wetlands Directory* was discussed and adopted. This accords broadly with the attributes identified as part of the minimum data set, and the desirable and derived information sets.

As the *Wetlands Directory* project continues throughout 1992 it may be necessary to refine this format as the State and Territory agencies begin preparing their information for inclusion in the publication. For a number of the attributes to be included (e.g. wetland type, landform, plant growth form) there is as yet no nationally agreed standardised nomenclature. The new ANZECC Wetlands Network will make recommendations for such standards. This process will be undertaken in collaboration with Wetland Inventory Workshop participants.

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Michele Barson
Bureau of Rural Resources

15 May 1992

60 MINUTES

Executive Meeting, Bronte Park, Tasmania. 24 April 1992

Present: R.Marchant, L.Barmuta, R.Edwards, J.Chambers

1) Finances: The secretary outlined the current financial position of the society and proposed expenditure. Two special publications and a membership directory will be produced in the next year; the estimated cost is $4500 - 5000. As well the society owes the CSIRO $4000 for "Limnology in Australia". Another $2500 must be set aside (in another account) to cover the subscriptions of life members. Thus at least $11000 is already committed.

2) Conference support: The secretary has received a request from P.DeDeckker for a subsidy of $5000 from ASL to support the running of an international palaeolimnology conference in Canberra next year. After consideration of the expenses outlined above, to which the society is already committed, it was decided to offer $2000 to support this conference.

3) FASTS: There was again discussion about whether the society should continue to support FASTS. A final decision will have to be made in the coming year.

4) Student prizes: A committee consisting of R.Edwards, L.Barmuta, P.Boon, A.Storey, J.Chambers was set up to judge the awards for the best oral presentation by a Ph.D student, for the best oral presentation by an honours student and for the best poster.

Executive Meeting, Bronte Park, Tasmania. 26th April 1992

Present: the whole of the new executive, except for M.Hart and S.Bunn

1. The financial position of the society was summarised by the secretary. This was as outlined at the previous meeting of the executive. The new executive confirmed the decision of the last executive that $2000 was an appropriate amount to offer P.DeDeckker for sponsorship of next year's palaeolimnology conference.

2. Conferences: Some discussion took place about the problems of running ASL congresses. It was felt that the most difficult problems arose when trying to account for all the money involved.

R.Marchant. Secretary.

HILARY JOLLY AWARD 1992

The Hilary Jolly Award commemorates one of the founders of the Australian Society for Limnology. It is awarded to those who are considered by the Society to have made an outstanding contribution to Australian limnology. Potential recipients must be nominated and seconded by members of the Society, and selection is made by a committee consisting of the three most recent award winners.

For 1992 the Hilary Jolly Award has been made to Dr Jorg Imberger, Professor of Civil and Environmental Engineering at the University of Western Australia. He is Director of the University's Centres for Water Research, Limnological Modelling and Environmental Fluid Dynamics.

Professor Imberger is known internationally for his research on the hydrodynamics of lakes and reservoirs. In particular he and his group have developed techniques for the measurement, analysis and modelling of fine scale water movements within water bodies. They have demonstrated the significance of these processes for the transport of salt, oxygen, nutrients and particulate material within water bodies. This research is not only of considerable significance from the point of view of theoretical limnology, but, as his work on Wellington Reservoir has shown, is also of great applied value.

The extensive support Professor Imberger has received from state government agencies in Western Australia reflects the degree to which his work is viewed as addressing significant problems relevant to the needs of the Australian community. The length and quality of his publication list reflects the extent to which his work is recognized as excellent science by his scientific peers.

In addition to his scientific contribution to limnology in general, Professor Imberger has made a major contribution to Australian limnology as an educator and facilitator. He has personally supervised numerous graduate students, and the "web" of centres he has played a key role in establishing in the University of Western Australia, has provided support, and an academic home for a large number and great variety of aquatic scientists. The Centres, growing from the initial Centre for Water Research established by Professor Imberger and Professor Arthur McComb, have functioned as a truly interdisciplinary research group, incorporating biologists, mathematicians and chemists along with engineers. They continue to be a model to which other research groups, both in limnology and other fields, aspire.

Professor Imberger is a worthy recipient of the Jolly award.

WINNERS OF STUDENT PRIZES AT THE 1992 CONGRESS

Three student prizes were awarded this year, and the judging committee was pleased to find that they had a hard time deciding winners. Paul Boon noted in his address to the AGM that the student presentations usually outshone those of their ostensible superiors. The winners were:

Best student poster presentation: Michelle Deaker of the University of Canberra for her poster entitled "Microwave digestion of marine biological tissue".

Best oral presentation by an honours student: Kerry Trayler of Murdoch University for her talk on the "Impact of potential chironomid (Diptera: Chironomidae) control agent, pyripoxyfen (S-31183), on indigenous non-target aquatic organisms".

Best oral presentation by a Masters or Ph.D. student: Shane Brooks of Monash University for his exposition of the "Responses of benthic macroinvertebrates to potentially catastrophic changes in discharge and turbidity".

Congratulations to all three winners.

Your cheques of $100 each and bookplates are in the mail. Honest.

REPORT OF THE DOOR PRIZE COLLECTIVE

ASL Conference, Bronte Park, April 1992

Once again, it is time to present one of the most sought after prizes awarded at these annual ASL Conferences. A prize with a great history over the past years, with previous recipients including Pat DeDeckker (the only two-time back-to-back winner), a species of *Daphnia*, Nick O'Connor (for introducing the Marquis de Sade technique of public speaking), Mark Harvey (for innovative use of plates and glasses in a talk) and John Bywater (for speed slide projection). In almost all cases, the winner of the Door prize has then gone on to greater things, so in previous years, members of ASL and conference attendees have vied with vigour to come to the attention of the anonymous and all-seeing committee/collective/association (who once again this year will remain anonymous and all-seeing) and be considered for the coveted Door (which again is not actually present).

So, what happened to you all this year? This year seems to have been an exception. In the main, the attendees at this conference appear to be singularly conservative, logical,

straight-forward, serious and depressed. Perhaps it is just a sign of the times, with everyone worried about cuts in funding, job security and - shudder - that ultimate of horrors - the upper management inspired "restructure" (don't mention that word!).

And this seriousness was reflected in the quality of the presentations at Bronte Park. Almost to a talk, the speakers were confident and well-prepared, with well-thought out arguments and slick graphics. In a word, they were professional. And professionalism is the ultimate anathema to the Door Prize collective.

Despite the best efforts of the attendees to thwart them, the committee (or collective) has managed to come up with a set of nominations for this years award. And these are:

1. The "Sensitive Dealing With the Public" nomination goes to an anonymous person (and we know who you are - so we expect small denomination, unmarked bills to arrive in the mail quite soon) for the public relations exercise in the bar late on the Saturday night, trying to convince local HEC and forestry workers of the errors in their ways over the Serpentine Dam and logging in National Parks.

2. The "Mission Impossible" nomination goes to Trish Geraghty for being the only person in Australia who can actually make water resource management flamboyant and stimulating.

3. The annual "Boulton/Brooks Innovation in Sampling" nomination goes to Stuart Blanch for the simulated cattle trampler sampler (complete with horns).

4. The "RTFM" nomination went to all attendees who sat in on the first few minutes of Session 2 on the first day, when they actually wanted to be in Session 1 (all guilty parties, put up your hands now).

5. This presenter has a personal nomination to the designer/builder of Bronte Park who decided that a location directly between the registration desk and Cabin 18 was an ideal spot for a small wetland, which could not be seen by a conference attendee carrying a suitcase late on a moonless night until it was too late.

6. The "George Michael Faith" nomination was taken out by Paul Boon for commitment to the results of one of his students.

7. And the "Peter Singer Animal Welfare" nomination was shared by an number of speakers who delighted in such observations of gas bubble disease, epithelial hyperplasia in fish, and exploding mice in bioassay tests.

But, as with any prize, there must be an ultimate winner. Or must there? While I'm sure you will agree that all of these are worthy nominees, it seems quite clear that none would be worthy recipients of such a prestigious award as the Door Prize. And so the collective has taken the unprecedented step of deciding that no prize shall be awarded for the 1992 Conference. This is a disturbing result; one which will hopefully strike at the heart of those who intend to be present at next years conference in Queensland. All the collective can say is - we know you all can do better, and we expect it of you next year.

Oh, "RTFM" comes from that well-known computer term for those who are having trouble working out how to set margins or indent paragraphs, how to load programs, why the screen suddenly went blank, what all those funny files in that \DOS directory do (and why didn't the computer work after I deleted them all?) and how do I get rid of that annoying background colour in Windows 2.0 - "Read The F****** Manual!".

ANNOUNCEMENTS

The 7th International Symposium on Trichoptera is to be held at Umea, Sweden, between 3-8 August 1992. Further information and registration forms available from Dr. A. Neboiss, Department of Entomology, Museum of Victoria, 71 Victoria Cres., Abbotsford, VIC 3067. Registration forms and abstracts should be submitted by 31 December 1991.

The 2nd International Conference on Reservoir Limnology and Water Quality will be held in Ceske Budejovice, Czechoslovakia between August 9-14, 1992. The scope of the conference is to document a progress in understanding reservoir limnology and water quality management during the last five years (since the first conference). Topics include Key factors in Reservoir limnology; geographical aspects; biological interactions; eutrophication; decomposition; modelling; and tropical reservoir fisheries. Details and pre-registration forms from: Dr. V. Vyhnalek, Hydrobiological Institute, Na sadkach 7, 370 05 Ceske Budejovice, Czechoslovakia before 30 December 1991.

Aquifers at risk: towards a national groundwater quality perspective, 15-17 February 1993, Canberra; organised by ANU & BMR. Contributions invited. Contact Shirley Kral, ANU Centre for Continuing Education, GPO Box 4, Canberra 2601, ph (06) 249 4580, fax (06) 257 3421.

Intecol's IV International Wetlands Conference, 13-17 September 1992, Colombus, Ohio, U.S.A. "Global Wetlands Old World and New". CALL FOR PAPERS; contact William J. Mitsch, School of Natural Resources, 2021 Coffey Road, Ohio State University, Colombus Ohio 43210 U.S.A. fax 1-614-292-761.

Asian Wetland Symposium October 15-20 1992, Lake Biwa Research Institute, Japan. Contact ILEC Secretariat, 3-4-22 Kyomachi, Otsu, Shiga 520, Japan. Fax +775-23-1581.

1st Society of Environmental Toxicology and Chemistry World Congress, Lisbon, Portugal, 28-31 March 1993. Conference theme: Ecotoxicology and environmental chemistry - a global perspective. Contact: Prof. Dr. A.M.V.M. Soares, Department of Zoology, University of Coimbra, 3049 Coimbra Codex, Portugal; fax +351-39-24-226.

The 5th International Lake Conference on the Conservation and Management of Lakes, Stresa, Italy, (northern) spring 1993. Organised by ILEC (International Lake Environment Committee Foundation). Contact R.M. Societa di Congressi s.r.l., Via Ciro Menotti 11, 20129 Milano Italy.

3rd International Congress on Medical and Applied Malacology, Camden, N.SW., 19-23rd October 1993. There will be three general symposia: 1. Economic, medical and veterinary aspects of parasites; 2. Molluscs and agriculture; 3. Aquaculture of molluscs. **One of the proposed excursions is to a "Fluke Infested Property".** Contact Phil H. Coleman, Division of Invertebrate Zoology, Australian Museum, PO Box A285, Sydney South, N.S.W. 2000; phone (02) 339 8112; fax (02) 360 4350.

Nominations called for 1992 Asahi Glass Foundation Blue Planet Prize for significant accomplishments in environmental studies. There are two categories: academic for "extremely advanced and highly original scientific or technical breakthrough" and development and implementation for "executing environmental projects, establishing and introducing environmental policies, concluding programs and conducting environment-related writing or media activities". Prize includes ¥50 million. Contact The Asahi Glass Foundation, Bank of Tokyo Building 12F, Marunouchi 1-4-2, Chiyoda-ku, Tokyo 100, Japan.

NEW BOOKS, etc.

Australia's biota and the national interest: the role of biological collections Australian Biologist 5(1), March 1992. Bill Williams has drawn our attention to this issue of *Australian Biologist* which covers a recent symposium on the values of, problems facing, and funding of biological collections in Australia. Contributions come from many leading

lights including Peter H. Raven, Judy West, Pauline Y. Ladiges, Ebbe Nielsen, Richard Schodde and Hal Cogger. Copies from Secretary, A.I.B., Science Centre, PB1, Darlinghurst, NSW 2010; $20.00 including postage.

BOOK REVIEWS

Fryer, G. (1991) "A Natural History of Lakes, Tarns and Streams of the English Lake District". Published by the Freshwater Biological Association, The Ferry House, Far Sawrey, Ambleside, Cumbria LA22 OLP, England, UK. ISBN 0 900386 50 9. Price: £18.00 368 pp.

Reviewed by Professor Bill Williams, Department of Zoology, University of Adelaide.

As I've written often, there are a great many differences between the ecology of waters in Europe and those here, and we ignore them at our peril. Nevertheless, every self-respecting Australian limnologist, sooner or later, will visit Europe to study, attend conferences, examine type collections. When they do, a visit to the English Lake District is highly recommended. Apart from its sheer beauty, it has an abundance of well-studied lakes, streams and other bodies of fresh water. It is also the home of the Freshwater Biological Association and the Institute of Freshwater Ecology. When next you visit be sure to take (1) warm weatherproof clothing, and (2) a copy of Geoffrey Fryer's book. You'll need both if you are to take full advantage of your visit! Unfortunately the book is not waterproof.

The book is a comprehensive account of the geology, physics, chemistry and biology of waters in the region. An introduction written for students, amateur naturalists and for all those who wish more than a snap visit to Wordsworth's Cottage, a quick road tour and the expenditure of X rolls of film, if you want to understand how water in this magnificent part of the Old Country 'works' this is your book.

Profusely illustrated with some 800 figures, it's text has been handwritten by Sharon Murphy. Were it that my writing was so clear! The overall result is that the book has a special charm denied books with the more sterile format usual these days. I find it very appealing. Get your copy by writing to the publishers at the address indicated. And have a nice trip.

Finlayson, M. & Moser, M. (General editors) (1991) "Wetlands". Published by Facts on File, Oxford and New York. £19.95. ISBN 0-8160-2556-8, pp 224.

Reviewed by Professor Bill Williams, Department of Zoology, University of Adelaide.

If you treasure wetlands, are attracted by their beauty and scientific interest, and believe their conservation important, buy this book. It is a lavishly illustrated account (with most figures in glorious technicolour) of the world's wetlands, continent by continent. It documents the major sites, the principal interests and values of each, threats to them, and much more besides.
Congratulations are certainly in order for Max Finlayson, an Australian known well to many members of the ASL, who is presently Assistant Director and Head of the Wetlands Division of the International Waterfowl and Wetlands Bureau (IWRB) headquartered in the UK. Together with his co-editor Michael Moser, Director of the IWRB, he has put together a series of contributions from distinguished colleagues (Patrick Denny, Ted Hollis, Tim Jones, Joseph Larson, Edward Maltby and Derek Scott) which - together with their own - form a memorable book.

The book will not form the basis of any undergraduate course that I can envisage, and can scarcely be recommended to high school students, but it is a book that I'm very glad to own (and I actually bought my copy: this review is not the price of a review copy from the ASL Newsletter editors!). Rush your order now before copies sell out. At £19.95 (plus post and packing), a giveaway. Moreover, since the book is published under the aegis of the IWRB, you will be helping that important organisation. Copies may be ordered from:

IWRB, Slimbridge, Gloucester, GL2 7BX UK

WORD ANSWER

A limnologist studies the physical phenomena of lakes and other fresh waters. From Greek *limne*, lake.

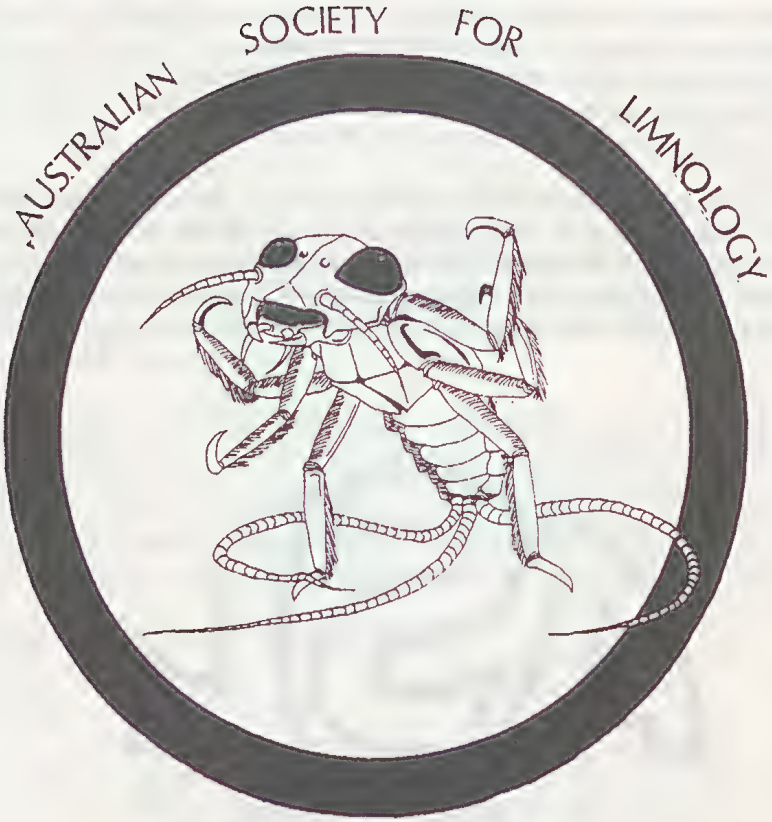
Hands up who got it wrong!

THE GREAT LOGO DEBATE

By the Editors of your treasured Newsletter.

Somebody commented at the congress that the search for a new logo was generally symptomatic of corporate decline (some-one also pointed out that the question of whether we actually need a new logo has not been totally decided). Well, if this puts us in the same league as the Commonwealth Bank, Kentucky Fried Chicken (known as KFC since "Fried" became a no-no in modern diet), and the entire state of Victoria, so be it. So long as our financial performance doesn't emulate Westpac.

A flurry of faxes and pieces of paper have been sent to us. We present them here without editorial comment (which we assure you was extremely difficult). We welcome any further contributions and look forward to a spirited correspondence from our readership. While you peruse these artistic articles, we'll just slip out and sip a little Coonawarra red. (Apologies to BR of Tasmania - your pencil-driven entry could not be reproduced!)



YOU KNOW WHERE TO SEND ANY NEW ENTRIES.

Editorial discussion on the Great Logo Debate

Ed. 1 ...1988? Was that any good for shiraz in the Coonawarra?

Ed. 2 Bumper year for the grapes, I think. Heard somebody say that it resulted in a rather watery vintage. Still, tastes alright to me. [FX: glass being filled from bottle.] Jeez, is that thing turned on now?

Ed. 1 [Clears throat] An interesting array of logos, don't you think?

Ed. 2 Hmm... interesting is one word that springs to mind. Personally, I feel that we should be aiming for something a little more inclusive...

Ed. 1 Something that encompasses the diverse range of our members' interests.

Ed. 2 Algae, macrophytes, bacteria, insects, crustaceans, worms, fish, fungi, water chemistry, boundary-layer fluid mechanics, lotic and lentic habitats, salt and freshwater, management, multivariate bamboozlement and an unswerving devotion to the eventual extinction of chironomids.

Ed. 1 You've forgotten the tropics, temporary waters, community metabolism and cyanobacteria.

Ed. 2 Compromises are part of Life. I think something heraldic will do the trick. You know the sort of thing: a coat of arms with lots of different panels supported by a couple of symbolic figures, crest over the top and some sort of Latin motto underneath.

Ed.1 Okay, we could divide the shield thingy into four alternating black-and-white quadrants (just like a secchi disk); that takes care of lentic and physicochemical limnology. A cyanobacterium and, say, a dinoflagellate in one quadrant with a cladoceran and a copepod in the diagonally opposite one...

Ed. 2 ...with benthic things in the other two quadrants. Such as a stonefly contrasted with a decomposing leaf pack...

Ed. 1 Oh yes! Process-oriented ecology in there too; very nice. And the shield-thingy could be supported by a wader-clad limnologist bearing a hand-net in one hand and some sort of generic PC in the other symbolising scientific integrity in field and laboratory. And ...

Ed. 2 A Manager!! Bearing a flow-chart and a half-written, over-due research proposal from the scientist. Symbolising integration, rectitude, forbearance, and extreme patience in the face of malfunctioning faxes, laser-printers, and photocopiers.

Ed. 1 Like it!! We would of course get these bearers gender-balanced.

Ed. 2 Sounds painful... oh I see what you mean! One of each so to speak. We'll flip a coin later to see which gender goes in the waders. Or should we seek specialist advice from a semiotician?

Ed. 1 Details, details. What about vascular plants?

Ed. 2 Wreaths of *Typha* worn around the heads of the bearers?

Ed. 1 Perhaps linked to some gismo to measure gas exchange to keep the physiologists happy. And we mustn't forget fish. The crest could be some galaxiid leaping up a waterfall.

Ed. 2 Galxiids are boring. How about a lamprey wrapped around the legs of the bearers?

Ed. 1 Slimy, jawless wonders that suck life-juices from hapless prey. Someone may misinterpret that as symbolising politicians. Remember neither of us has permanent jobs. How about a trout writhing with gas-bubble disease? Applied, vertebrate limnology...

Ed. 2 ...politically correct and way too gruesome. Umm... ah! Some brightly coloured, *tropical*, *native* fish. Barramundi! I know they're not *really* colourful, but it would get estuaries into the picture.

Ed. 1 Have some more red, you look parched.

Ed. 2 What a great motto! And thank you. What's Latin for "have some more red"? If we inscribe the motto on a long, wavy, lotic-looking blue line...

Ed.1 Just drink the wine.

[FX: sipping noises as voices fade]

WELCOME TO NEW MEMBERS

We start today, a new section that presents the names and addresses of new members to the society. On behalf of the editors, the executive and established members, we would like to welcome the following people to the society. Perhaps seeing their name in print might stimulate them to see it again, maybe by contributing thoughts or responses to requests ... well, maybe ...

Dr. Jane Growns
[No Fixed Address?]
Tasmania

Mr Ralph Ogden
ANU
ACT

Ms Pauline Gazey
University of WA
Western Australia

Ms Mary Mulcahy
IFC
Tasmania

Ms Belinda Murray
University of WA
Western Australia

Ms Patricia Murray
Wagga Wagga
New South Wales

Mr Giles Flower
Adelaide University
South Australia

Mr Robert Walsh
University of Tasmania
Tasmania

Mr Tom Carmichael
Camp Scott Furphy
Pymble, NSW

Ms Zoe Rosser
James Cook University
Queensland

Mr Martin Read
Griffith University
Queensland

Mrs Reshmi Sharma
Monash University
Caulfield, Victoria

S. Sazito
University of Tasmania
Tasmania

Ms Dianne Jolley
University of Canberra
ACT

Mr George Paras
La Trobe University
Victoria

Dr John Ferris
ANSTO
New South Wales

Ms Samantha Brown
University of Tasmania
Tasmania

Ms Kate Gloury
Rural Water Commission
Victoria

Ms Ann Goodsell
University of Tasmania
Launceston, Tasmania

Dr Stephen Swales
Agriculture & Fisheries
New South Wales

Mr Paul Keyte
Dept. Water Resources
New South Wales

Ms Maria Vazquez
Monash University
Victoria

Ms Pauline March
University of WA
Western Australia

[*If your details are wrong, contact Margaret Hart now and get them fixed*]

EXECUTIVE MEMBERS

President: Dr Leon Barmuta, Zoology Department, University of Tasmania, GPO Box 252C, HOBART TAS 7001 Ph: (002) 202785 Fax: (002) 202745

Vice-President: Dr Paul Boon, MDFRC, PO Box 921, ALBURY NSW 2640 Ph: (060) 431002 Fax: (060) 431626

Immediate Past President: Dr Stuart Bunn, School of AES, Griffith University, NATHAN QLD. 4111 Ph: (07) 8757407 Fax: (07) 8757459

Secretary: Dr Richard Marchant, Museum of Victoria, 71 Victoria Crescent, ABBOTSFORD, VIC. 3067 Ph: (03) 4195200 Fax: (03) 4160475

Treasurer/Membership Officer: Mrs Margaret Hart, 22 Netherby Avenue, MULGRAVE VIC 3170 Ph: (03) 5604406 Fax: (03) 5604406

Regional Executive Members: 1992-93

Mr John Hawking, MDFRC, PO Box 921, ALBURY NSW 2640 Ph: (060) 431002 Fax: (060) 431626

Marcus Brownlow, Botany Department, University of Adelaide, Box 498 GPO, ADELAIDE SA 5001 Ph: (08) 2285292 Fax: (08) 2323297

Dr Jane Chambers, Institute of Environmental Science, Murdoch University, MURDOCH WA 6150 Ph: (09) 3602739 Fax: (09) 3104997

Peter Dostine, Office of the Supervising Scientist, PMB JABIRU NT 0886 Ph: (089) 799711 Fax: (089) 792076

Dr Paul Humphries, Inland Fisheries Commission, 127 Davey St, HOBART TAS 7000 Ph: (002) 236622 Fax: (002) 234372

Dr Michele Barson, Bureau of Rural Resources, PO Box E11, Queen Victoria Terrace, PARKES ACT 2600 Ph: (06) 2724347 Fax: (06) 2724896

Dr Brad Pusey, CCIR, Griffith University, NATHAN QLD 4111 Ph: (07) 8757401 Fax: (07) 8757459

Ms Patricia Geraghty, DWR, 1/35 Spring St, MELBOURNE VIC 3000 Ph: (03) 6513943 Fax: (03) 6513989

Editorial Addresses: Leon Barmuta, Zoology Department, University of Tasmania, GPO Box 252C, HOBART TAS 7001 Ph: (002) 202785 Fax: (002) 202745 E-mail: Leon.Barmuta@zoo.utas.edu.au.

Tim Doeg, Freshwater Ecology Branch, Department of Conservation and Environment, 123 Brown St., Heidelberg, VICTORIA 3084 Ph: (03) 4508622 Fax: (03) 4508799

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